5-29-1968

The Amplifier - v. 13, no. 11

Associated Students of the Montana College of Mineral Science and Technology

The AMPLIFIER

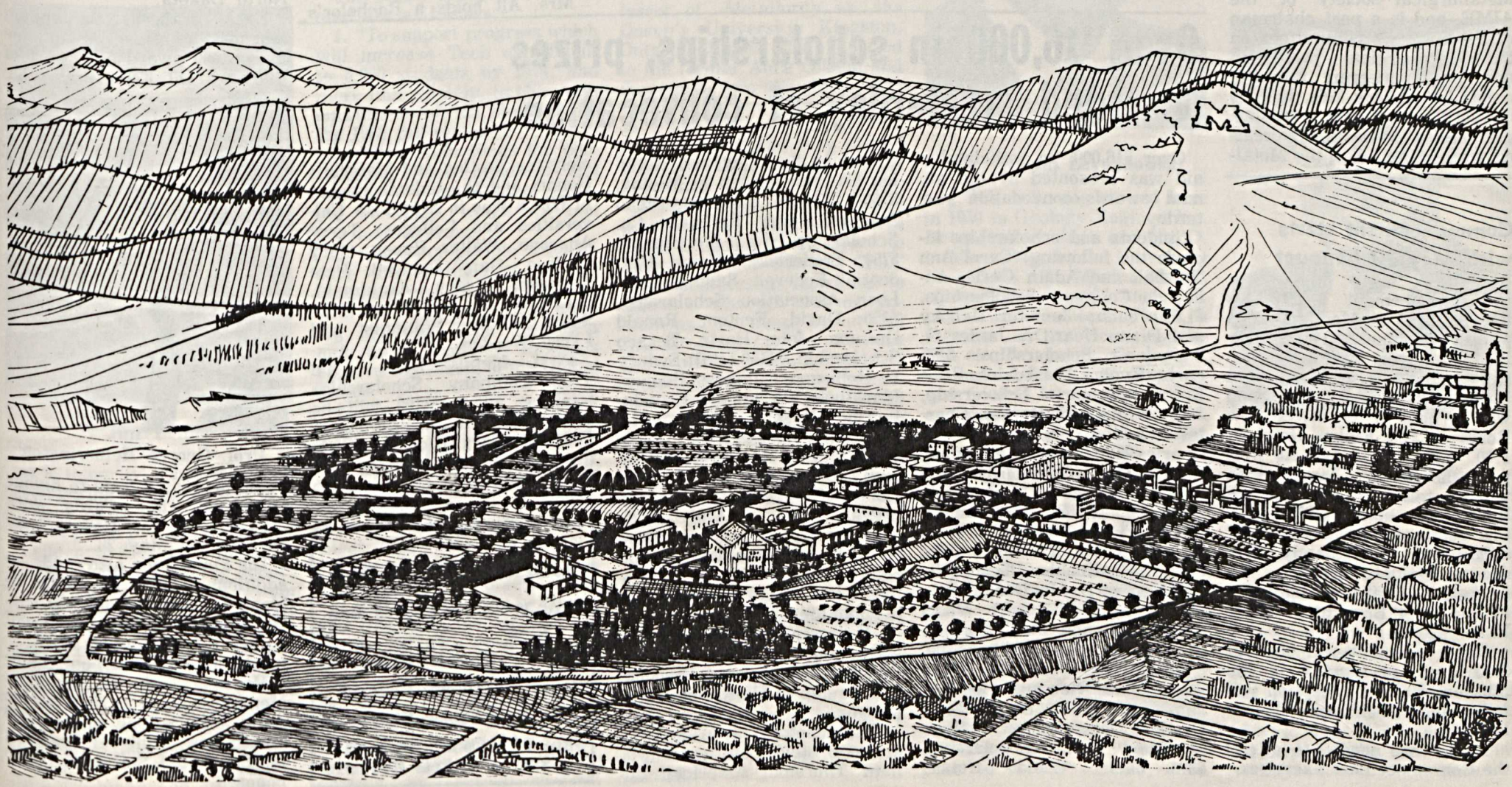
Montana College of Mineral Science and Technology

Vol. 13, No. 11 | BUTTE, MONTANA | May 29, 1968

HAPPY 75TH ANNIVERSARY

★★★★★ 75th Anniversary Issue --- 1893-1968 ★★★★★

THE ANNIVERSARY ISSUE celebrates the seventy-fifth birthday of Montana College of Mineral Science and Technology. Although the college (then Montana State School of Mines) did not open its doors until September 11, 1900, legislation for the establishment of the school dates to 1893. Above is the original building, Main Hall, as it was being constructed about 1899. The first class paid no tuition, or $25.00 if from out-of-state, and had a choice of two courses: mining and electrical engineering. The faculty consisted of five men. In 1907, the legislature appropriated $59,000 for a new heating plant and an additional building to be used for ore-dressing and metallurgy. Main Hall contained offices, labs, drawing rooms for all departments. Below is architect Walter Hinick's vision of the campus of the future. This is symbolic of the spirit of progress that has been part of the college through most of its seventy-five year history. The next seventy-five years can be momentous ones for this institution as well as for the world in which it can play an important part.



Dr. Hibbard commencement speaker

Dr. Walter R. Hibbard, Jr., internationally known metallurgical engineer, and former Director of the United States Bureau of Mines, will be the commencement speaker at the 1968 graduation exercises of June 2, in the auditorium of the Montana Tech, at 3:30 p.m., Montana Tech Library Museum building. His address is entitled "Mineral Resources: A Need for Technology." At this time the degree of Doctor of Engineering, Honoris Causa, will be confered upon him.

Dr. Hibbard is presently the Vice President of Research and Development at the Owens-Corning Fiberglass Corporation, Granville, Ohio.

A 1939 graduate of Wesleyan University, he received a Doctor of Engineering degree from Yale University in 1942. Following his military service in World War II as a naval officer, he joined the faculty at Yale as an assistant professor and later became as associate professor.

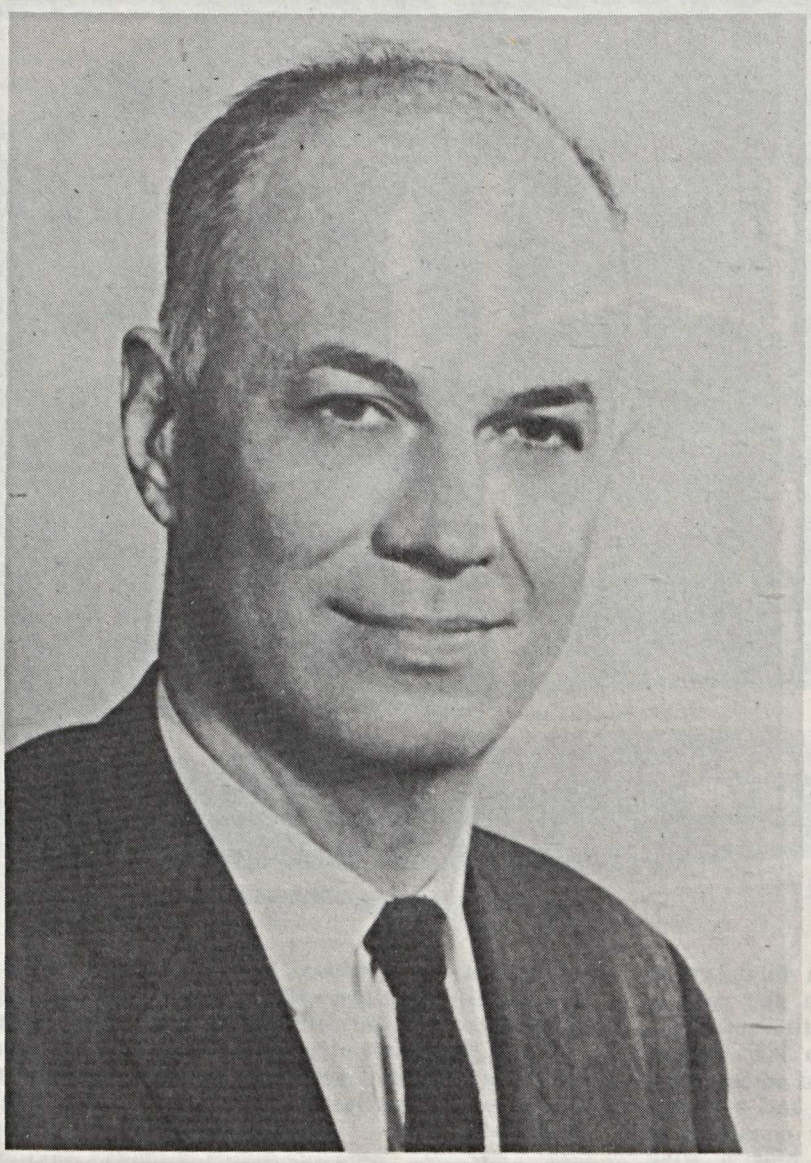
Dr. Hibbard's growing reputation in the teaching and research fields attracted the attention of industry, and in 1951 he was recruited by the General Electric Company for its research and Development Center in Schenactady, New York. There he progressed to the position of Manager of Metallurgy and Ceramics Reseach, directing a board range of fundamental and applied research projects, a position he held when appointed the Director of the Bureau of Mines by President Johnson in 1965.

Dr. Hibbard received wide recognition from many professional societies, because of his achievements in such fields and the plastic deformation of metals and the metallurgy of copper and its alloys. In 1950, he received the Raymond Award of the American Institute of Mining, Metallurgical, and Petroleum Engineers. From 1957 to 1961 he served as director of the Institute, and in 1967 served as its President. For many years a registered professional engineer, Dr. Hibbard has served as President of the Metallurgical Society of the AIME, and is a past chairman of the Society's committees on the metallurgical profession and on engineering management. In January 1963, he was one of ten eminent metallurgists elected to the newly created grade of Fellow of the Metallurgical Society. In addition, Dr. Hibbard belongs to the British Institute of Metals and the New York Academy of Sciences, and is a fellow of both the American Academy of Arts and Sciences and the American Association for the Advancement of Science. He also is a member of the Materials Advisory Board of the National Academy of Science, and was recently its Chairman. In 1966 he was elected to the newly organized National Academy of Engineering.

The author of more than 70 scientific papers, Dr. Hibbard has been widely recognized as a major contributor to the science of metallurgy. In 1957, he was a member of the exchange delegation of United States metallurgists visiting the Soviet Union.

He had been elected to many honorary and professional fraternities including Phi Beta Kappa, Sigma Xi, Alpha Chi Sigma, and Gamma Alpha. He also holds an honorary Doctor of Law degree from the Michigan Technological University, Houghton, Michigan.

Dr. and Mrs. Hibbard have three children and reside in Rockville, Md.



Dr. Walter R. Hibbard, Jr.

Commencement starts with May 30 banquet

Commencement activities will be held at Montana Tech May 30 to June 2. The activities will begin with a Father-son banquet on Friday night May 30. The Senior Luncheon will be held in the Silver Bow Room of the Finlen Hotel at 1:00 p.m. Saturday. At 3:00 p.m. the Senior Class picture will be taken in front of the Library Museum Building and the commencement rehearsal will follow immediately. The Alumni annual banquet will be held at 7:00 p.m. Saturday at the Silver Bow Room of the Finlen Hotel.

Commencement will be at 3:30 p.m. on Sunday in the Museum Hall. A reception will follow and be held in the Copper Lounge.

Tickets are needed to attend the Commencement exercises.

Over $16,000 in scholarships, prizes awarded yesterday at convocation

Over $16,000 in scholarship aid was presented at the annual awards convocation yesterday.

Students and scholarships include the following: Carol Ann Trythall and Adam Gerle, Anaconda Company Scholarships, $1,000 each; Jennifer Jansky and Diane Hoar,Dr. James G. Sawyer Scholarships, $175 each; Evelyn Blaskovich, Jane Buttrey Memorial Scholarship, $600; William H. Barnes, Charles J. Adami Scholarship, $400; Charles Hutt and Walter Bauer, Society of Exploration Geophyicists, $750 each; Charles Hutt Cobb Foundation Scholarship, $500; Clark Walters, Viola Vestal Coulter Scholarship, $400; Kyle Koehler, George R. and George D. MacDonald Scholarship, $204; Robert Voermans, Mr. and Mrs. Norman A. Stockett Schloraship, $600.

Others are Neal A. Mancuso, Gino Diamanti Scholarship, $400; John Blumer and Gardar Dahl, Amax Geological Field Camp Scholarship, $375 each; Claude Huber, American Smelting and Refining Co. Scholarship in Mining, $750; William Rust, American Smelting and Refining Co. Scholarship in Metallurgy, $750; Frederick Hoffman, Prudential Federal Savings and Loan Association Scholarship, $350; David Fenton, Ronald Deriana, John Hartz, Texaco Scholarship, $1150 total; Sydney L. Robinson, James Benner, Marathon Oil Company Foundation Scholarships, $250 each; Thomas Schneider, Robert Westermark, Pan American Petroleum Corporation, $1500 total; Donald Carkeek, Billings Petroleum Section of AIME, $500.

Also receiving scholarships were Ronald Koehler, Joseph Konicki, and William Thurston, AIME Women's Auxiliary Scholarship, $1200 total; Roger Miller, Kenneth Christie Award; and Bill Daily, Chevron Oil Company, Western Division, Scholarship in Petroleum Engineering.

Non-monetary awards were given to Steve Sands and William Thurston, American Society for Testing and Materials Honor, and to students named in **Who's Who in American Universities and Colleges:** Terry Angrove, Walter Bauer, Gary Carlson, Gary Dunford, Pete Kundsen, Frank Koskimaki, Ed Nordquist, Dick Rule, John Sutey, Billy Williams, and Larry Wooden.

First Metals Bank and Trust Company Scholarships totalling about $1100 will be given to David Laramie (Boys Central) Mary Riordan (Girls Central), Vivian Shockey and Ralph Sorenson (Butte High School).

Commencement

May 30 — Father-Son Banquet

June 1 — Senior Luncheon

June 1 — Alumni Banquet

June 1 — Senior Picture

June 2 — Commencement 3:30 — Tickets Required

Outstanding Teacher Awards recently presented here

Miss Elizabeth Satter, associate professor of Mathematics; George Hetherington, instructor in Petroleum Engineering; and Mrs. Lucille Alt, assistant professor of Humanities and Social Sciences, have been named "Outstanding Teachers" in undergraduate instruction during the 1967-68 school year.

Miss Satter graduated from the University of South Dakota, Vermillion, South Dakota, receiving her Bachelors and Masters' Degrees from this institution. She has also attended summer schools at Drake University, Des Moines, Iowa; Spearfish Teacher's College, Spearfish, South Dakota; University of Montana and Montana State University.

Before coming to Montana, she was the head of the mathematics department of Wukon Junior College at Waukon, Iowa, and she also taught mathematics and science for one year at Basco High School, Basco, Illinois. She taught for nine years as a supervising teacher in the training school for student teachers in mathematics and science at Western Montana College. Other work includes one year with the U.S. Weather Bureau at Des Monies, Iowa as a mathematical consultant in connection with long range weather prediction.

She joined the staff of Montana Tech in 1957.

Mr. Hetherington received his bachelors degree in 1928 from the University of Colorado in Boulder. He has worked for Cities Service Oil Company as a geophysicist, the National Park Service as an engineering aide, the California Conservation Commission as an engineer for both Western Gulf Oil Company and Gulf Oil Corporation. For ten years, beginning in 1958, he served as chief reservoir engineer for the Kuwait Oil Company, Kuwait, Arabia, and in 1964 became technical adviser to Kuwait Oil Company with offices .in London. Mr Hetherington came to Tech in 1966.

Mrs. Alt holds a Bachelor's degree from Dakota Wesleyan University and a Master's degree in 1947 from George Peabody College for Teachers, Nashville, Tennessee. She taught at Gregory, Letcher, and

Prof. Elizabeth Satter

Mitchell, South Dakota between 1939 and 1944. For the following two years she was a link training teacher with the United States Navy. In 1947 she joined the faculty of Vermillion High School, South Dakota, and, during 1950-51, taught at the University of Montana. She was

Prof. Lucille Alt

at Malta High School during 1957-58 and then joined the English Department at Dickinson State College, Dickinson, North Dakota.

Each of these "outstanding teachers" received a plaque and $1,000 award as a part of Standard Oil Foundation's national program of aid to higher education. The awards were presented at the Honors Convocation on May 28.

Prof. George Hetherington

The Foundation also made an additional $2,000 available to Montana Tech for general use. Dr. Koch said, this money will be used to purchase instructional and research equipment.

Montana Tech is the only Montana college to receive this grant and is one of only 29 institutions of higher learning in the United States to be so honored.

Nine to receive honorary professional degrees

At the 1968 commencement of Montana College of Mineral Science and Technology, nine Honorary Professional Degrees will be awarded. The former students and graduates to be so honored are as follows alphebetically: Frank Aplan, Robert Corbett, Douglas Fueratenau, Frederick Hames, Harold Lake, Donald Levandowski, K. DeAtley Loughridge, Stanley Olson, Robert Ramsey.

Mr. Frank F. Aplan is Professor and Head of the Department of Mineral Preparation at the Pennsylvania State University. He received his Masters Degree from M.S.M. in 1950. He later earned his Sc. D. in Mineral Engineering from M.I.T. in Cambridge, Masschusetts.

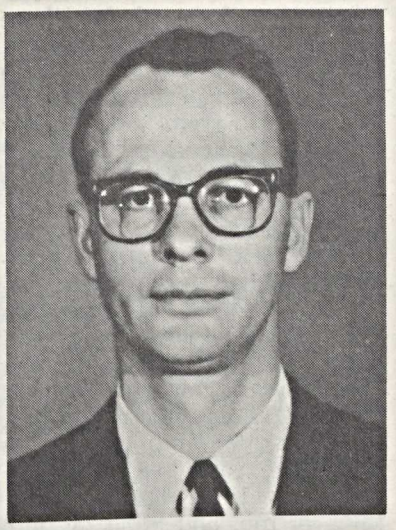
Dr. Frank Aplan

He is married to the former Clare M. Donaghue and has three children. He is a member of the American Chemical Society. Sigma Xi, and chairman of AIME.

Mr. Robert P. Corbett resides here in Butte with his wife, the former Dorothy Ross and their two sons. He received his Bachelors Degree in Metallurgy in 1940 and since that time has been employed by the Anaconda Co. He is a member of A.I.M.E. and the Montana Society of Engineers. He is also active in the Butte Rotary Club.

Robert Corbett

Having received his Masters degree in 1950, Douglas W. Fueratenau is now a Professor of Metallurgy at the University of California in Berkeley. He is married to Margaret Pellett Fuerstenau and they have three children. He is a registered Professional Engineer in the State of Cailfornia and a member of A.I.M.E., the American Chemical Society, Sigma Xi, and National Academy of Sciences.

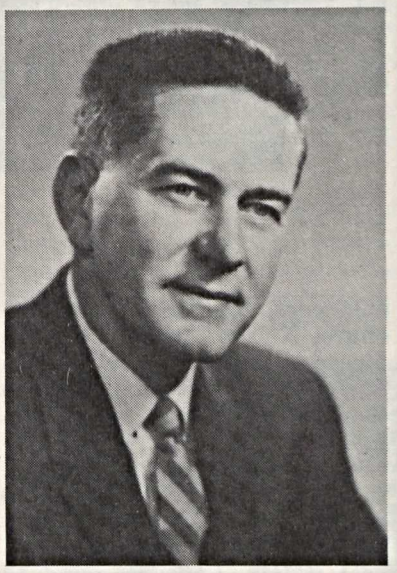


Douglas Fuerstenau

Frederick Arthur Hames attended MSM from 1936 to 1940 to receive his Bachelor's Degree. From here he continued on at Missouri School of Mines to earn his Ph. D. in 1948. He presently holds the title of Professor of Metallurgy at the Queen's University, Kingston, Ontario, Canada. He is married to the former Alice Gibson and they have two daughters. Organizations he is participating in include ASM, AIME, and Canadian Institute of Mining and Metallurgy.

Dr. Fredrick Hames

Graduating in 1940 with a Bachelor of Science degree in Mining was Harold E. Lake. He is now Vice-President of Mining and Exploration at the Eldorado Mining and Refining Limited in Edmonton, Alberta. He married Ruth Edna McDonald and they have two children. He was honored with the Canada Medal in 1954 and the Centennial Medal in 1968. Active in several organizations, he is President-elect of Saskatchewan Mining Association and Director of Alberta and Northwest Chamber of Mines.



Harold Lake

Donald William Levandowski is now an Associate Professor of Geosciences at the Purdue University, at Lafayette, Indiana. His B.S. was earned here in 1950 in Geology Engineering. He earned his M.S. and Ph. D. in Mineralogy at the University He and his wife, Martha Midlik, of Michigan in 1952 and 1956. have two daughters. He is a member of American Asociation of Petroleum Geologists, Geological Society of America, and Society of Economic Paleontologists and Mineralogists, He was named to Who's Who in the Midwest in 1968.

Dr. William Levandowski

The General Manager of Western Smelting and Refining of Salt Lake City is a graduate of 1940 in Metellurgy Engineering. He is K. DeAtley Loughridge and has worked for Western Smelting for twenty-three years. Married to the former Alice Sullivan, they have three children. He is active in the Youth Activities of his community and a member of American Institute of Mining and Metallurgical Engineers.

Stanley Granville Olson is married to the former June Ralph of Butte and they now reside in Calgary, Alberta, Canada with their two children. His Bachelor's Degree was received in Geological Engineering in 1948. Since that time he has been employed by Continental Oil Co. He is a member of AIME, CIM, and a director of the B. C. Division, Canadian Petroleum Association.

K. DeAtley Loughridge

Stanley Olson

Robert Henderson Ramsey received his Master's degree from MSM in 1934 in Metallurgy Engineering. He is presently Executive Vice President of St. Joseph Lead Company of New York. He is married to Vera Volkert Ramsey and they have two children. The author of approximately 150 articles or papers dealing generally with mining or metalurgical operations, he was given the Distinguished Service Citation from the University of Wisconsin in 1966. He is an active member of AIME, Mining Club of New York, Mining and Metallurgical Society, and the University Club of New York.

Robert Ramsey

Leifer wins Gold Medal Award

Jim Leifer, a senior majoring in petroleum engineering, from St. John, Washington, has been selected by the Montana Society of Engineers to receive its Gold Medal Award.

The winner of the award is always a member of the graduating class, who, by the combined judgement of faculty, juniors, seniors and the award committee of the Montana Society of Engineers, stands highest in integrity, scholarship and engineering promise. It is considered to be the most honored award given to a Tech senior.

Jim Leifer

The activities in which Jim has participated and the honors which he has received within his 4 years at Tech include: President of the A.S.M.T.; ABS, delegate-at-large; Outer Guard; Theta Tau; Copper Guards, Chancellor; Magma, editor; AIME, mobile scholarship; SFP Billings Division Scholarship; and Basketball — 4 years. (honorable mention all-conference freshman and senior).

Boulter explains Booster aims

In a recent interview, Bob Boulter, president of the Tech Boosters Club, stated the efforts and goals of the newly formed organization. At this writing, there are 375 regular members and 100 Century Club and goals as they were enumer- members in the Tech Boosters.

The club's direction of effort ated are as follows:

1. "To support progress which will increase Tech enrollment to 3,000 students by 1974, and more immediately, to obtain an enrollment of 750 students by the 1968 fall sementer.
2. "To obtain funds for constructing new buildings and necessary renovation of existing buildings, which we feel are long overdue.
3. "In every posible way, insure the continuation of the minerals engineering degrees, with the eventual hope of making Montana Tech the finest and most complete minerals engineering school in the United States.
4. "To support and develop a respectable and winning athletic program.
5. "To support the school in offering more mineral-related enginering degrees, such as in Chemistry, Physics, Math, Electrical, Mechanical, and Aerospace engineering, plus added general courses.
6. "To encourage private, and federal funds for the establishment of a research center."

When asked how Tech students could contribute to the Boosters' efforts, Boulter said "The students should be conscious of the efforts of the citizens who make up the Tech Bosters Club, and they should advertise their school wherever they travel."

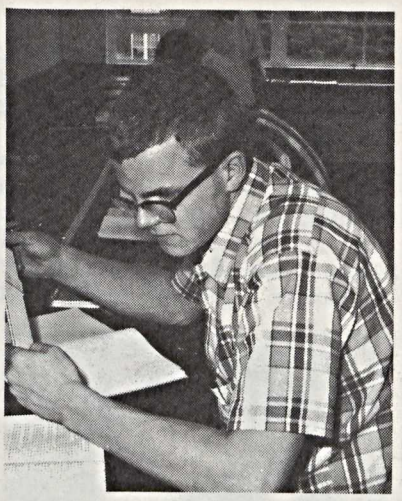
Mike Duran, newly elected president of Tech's student body, is heading an effort to form a "Junior Boosters Club" with membership restricted to students. Through this oganization and its dues, Duran and Dr. Branson (of the Physics Department) wish to start a radio station on campus somewhat similar to the radio setup at Bozeman. According to Duran, the station can be set up in two year's time at an initial cost of $5,000 to be paid for and maintained by a five dollar dues fee for Junior Boosters membership.

This station, which would be an FM Channel covering the immediate vicinity of Butte, would publicize anything pertaining to Montana Tech.

Duran said, "Another reason for starting the Junior Boosters is to show our thanks and appreciation to the businessmen of Butte who have organized themselves to help Montana Tech grow."

Cross Cut

by L. C. Hoffman



IF YOU ARE TWENTY-ONE AND REGISTERED, DO SOMETHING EXCITING AND DIFFERENT THIS JUNE FOURTH . . . **VOTE!** ! ! ! !

And, to plug a little, in an offhand way, for one candidate in particular, do you know which mayor of a large Montana city has done more for higher education, especially Montana Tech, than anyone in the upper State offices in the last four years? Well, it sure ain't the mayor of beautiful downtown Butte.

Well, the old school year is about shot in the posterior. Summer is about to leap on all of us and saturate our little bippies with purd dust. I thought it might be nice to let all of you in on what your favorite professor was planning for the summer. If I leave someone out, either The Censors (beep-boop) got it or the idea drowned in marble-pecan Kool-Aid.

Mr. Stout isn't doing anything except regaining all the Strength he lost this semester. Frank Young and Bill Van Matre are going to capitalize on the opportunity of a lifetime and go into a mining venture with Ram and Gary. Gary has some kind of an open pit deal up his sleeve.

Mr. Herndon is going to relax all summer and totally reconstruct the campus, alter the inclination of the earth four degrees, and contract the expansion of the Berkeley pit to the outskirts of Anaconda.

McLaslin, Marshall, and Branson are writing a book called **Attaching Mg (OH) 2 Molecules to Benzene Rings In the Proper Form** or **A Study of Meta-Physcis.** Dr. Warren is going to Hollywood to start in a summer TV series about a dedicated doctor of petroleum who sets up a clinic for wildcats in the midst of his oil field on top of Pikes Peak. Gus Stolz is going to a convention of wardens of penal institutions to try to find some way to control the dorm. Mr. Hetherington is going to spend the summer months on the Riviera splurging his best teach award with Mrs. Alt and Miss Satter, if they can convince LBJ to let them take all that money out of the country.

Tom Finch is planning to trap stray cats and give them to Don McGlashan, Don, on the other hand is planning to work all summer in research to find a universal solvent for mining engineers, Mathecaticians Catenaro, Nelson, and Goebel are already deeply involved in planning their courses to make them appear even more like magic. Frank Kelly is going to take apart the door of the registrars office to see if he can find why good looking high school girls rarely get past it. Mr. Laity is going to restore his rare 1955 Ford to operating condition. Mr. Taylor plans to hide under his bed after people find out the truth about the **Amplifier.**

The whole geology department is going on a field trip to Jefferson Canyon, for a change, to hunt for three-toed sloth concretions. Mr. Maney is going to analyse the social-ogical implications.

Coach Braun is reported developing a mortar launched football that weighs 812 pounds and is loaded with holy water. The met department is going to rig an alarm system to keep the mineral dressers out of the shop. Dr. McLeod is building a giant organic molecule that contains radicals of every known cation and is totally impossible to analyse by ordinary qualitative methods. Dr. Diebold is working on a way to add food coloring. Professors Ensley and Murray are doing something with a large pot of asphalt and a box of horsefeathers.

So the summer is shaping up on real fun. I plan to have some myself. I hope ya'll do to. But it this summer is going to be fun, next school year should border on the hilarious.

DIANNA
Have you ever seen
A Summer's night so lovely
That the maiden moon
Paused silently in the sky
To shed silver tears and sigh?

by Eileen McNellis

AMPLIFIER STAFF

Editor ..... Pete Knudsen
Sports ..... Jerry Trythall, Les Ocks
Staff .... Eileen McNellis, Kathy Mahoney, Linda Morris, Dale Mrkich, William Nettles, Rae Lynn Reap, Barbara Redfern, Ann Swindle, Mary Ann West,

Special Reporters - Dave Kneebone, Steve Bauer, Bob Chew

Photographer ..... Mike Dewey
Business and Advertising ..... Richard Daniels
Columnists ..... Ernie Bond, Larry Hoffman
Publications Committee: ..... Robert Taylor, Frank Young, Robert Athearn, Dr. Ralph King

Published 11 times during the academic year by the Asociated Students of the Montana College of Mineral Science and Technology, Butte, Montana 59701. Entered as Second Class matter on January, 1960, at the Post Office at Butte, Montana, under the Act of March 3, 1897, as amended.

BOND'S EYE VIEW

Ernest Bond

The end of another term. Another step forward for those who love intelligence, reason, and ability. A step off the path for those who prefer to remain in the world from whence they came — a place to which there is no return. Once exposed to intelligence and the use of it, you cannot go into or return to the world of the past without breaking your spirit, because you have found that the difference between man and other animals in the human brain, or rather, the use of it. There are places to go, things to do, and people to know. The world beckons to you now, and says, "make something of me, and mold me into the shape and form of your highest dreams." The world says "mold me in a fitting monument to those who will name you as one of their ancestors. Destroy me and you will have nothing — no one to appreciate the great work you have done."

You should know now that you MUST leave this school as a distinct individual, unique in your own right, to be able to rise above yourself to achieve your fondest dream. If you do not leave here as an individual, you will never be known or appreciated. Think your own thoughts — not those given to you by politicians, hippies, ethnic groups, or anyone else. Be yourself, and be proud of this and your intelligence and abilities. Become a slave to no man, and allow no one to be a slave to you.

A phrase has been coined "From each according to his ability, to each according to his need." A noble thought — but by whose standards? It is this philosophy which has killed the love of one's ability. It has ruined grand and great civilizations. It is this phrase which has killed geniuses and retarded science for years. When America began, the prime rule was this, "If you don't work, you don't eat." It made America great. People did not need each other, they needed each other's ability to survive. And now, more than ever, we need, not each other, but the project of each other's intelligence, him abilities, reason, and good judgment. Being just a people won't feed starving people, being just a people will not stop wars, or create progress. Being just a people does not cure society's evils, it creates them.

So my friends, whether you are graduating this year or coming back next year or going to other school, remember this: Never lose your own identity, individuals are the hope of the world that it will not die. Individuals are creative — herds trample. Enjoy and love your intelligence, your abilities, and be proud of your achievements. Use always your best judgment, common sense, and reason, and go ahead and be a happy in your successes — it's not a sin to be happy.

If you have studied mathematics, you know that it is rather easy to solve two simultaneous equations with two unknowns, but it is impossible to solve two simultaneous conservations even with only one unknown? ! ?

Student officers elected

The new student council: (left to right) Miss Satter, student council adviser, Robin Sterrett, delegate, Dan Piazzola, vice-president, Mike Duran, President, Tom Schneider, delegate, and Kay Lear, secretary.

Mike Duran, a junior in engineering science, running on the independent ticket, was elected president of the Montana Tech student body in elections held on M-Day. Duran was declared the winner when he posted a decisive majority of the votes over the other two candidates for the office who represented the two fraternities on campus.

Kay Lear, also an engieering sciecne major and also an independent, was elected secretary-treasurer of the A.S.M.T. Also elected on M-Day was Tom Schneider, a candidate for delegate to the Student Council who ran on the Theta Tau election ticket.

The offices of vice-president and the other delegate, however, were not filled by the M-Day election. A runoff election was later held because none of the candidates received a majority vote, and the top two top candidates of the May 1 elections for these offices ran again. In this runoff election Dan Piazzola, a Sigma Rho candidate, defeated Jim Mischkot of Theta Tau for vice-president, and Robin Sterrett, also of Sigma Rho, became the second delegate to the Student Council by defeating Jim Benner of Theta Tau.

The students also expressed their wish to amend the present constitution with a new and more generalized one. The A.S.M.T. members voted overwhelmingly for the new constitution with only 20 dissenting votes of some 280 cast in the selection. It is estimated that 58.5% of the student body took an active part in the elections.

The Orediggers ended a 9 year losing streak in football in 1962.

LITTLE MAN ON CAMPUS

"GO AHEAD — ASK ME SOMETHING."

Tech graduates students in 5 departments

Petroleum graduates. Front row left to right, Ed Nordquist, Terry Angove, Gary Johnson, and Jim Leifer. Back row left right, Gary Carlson, Frank Koskimaki, John Sutey, and Colin Tayor.

Petroleum Engineering Department is graduating ten engineers this spring. Of these ten, one, Gary Johnson, will go to graduate school at Montana Tech.

Engineers going to work for major companies are Ed Nordquist of Anaconda, Montana, who is going to work in Casper, Wyoming for Continental Oil; Gary Carlson also of Anaconda who is going to work for Union Oil Company in Santa Fe Springs, California; Jim Liefer of St. John, Washington, who is going to work for Texaco in Cortez, Colorado; Larry Wooden of Norborne, Missouri, who is working for Shell Oil in Los Angeles, California; Ken Tholstrom of Anaconda who is working for Getty Oil in Bakersfield, California.

Engineers from Butte include Terry Angove who will work in Ventura, California for Continental Oil; Frank Koskimaki who has accepted a position with Continental in New Orleans, Louisiana; and John Sutey who will work for Continental Oil in Casper, Wyoming.

GRADUATE MINING

The engineers graduating this spring in Mining Engineering and Geological Engineering with a mining option have landed various jobs with some of the major industrial firms of the United States.

Clint Degenhart, a Mining engineer from Philipsburg, Montana, wil go to work for the Bear Creek Mining Company in Alaska after graduation. Other graduating seniors in Mining engineering are Bill Williams of Butte who will accept a position with the American Smelting and Refining Company in Idaho; Bill Pierre from Seattle, Washington who will be employed by the Nevada Mines Division of the Kennecott Copper Corporation, and Larry Katcher from Manitoba, Canada who will work for the Anaconda Company here in Butte.

The seniors in Geological Engineering with a mining option have also accepted jobs with major firms in the United States, in fact Pete Kundsen and Andy Johnson have signed with the biggest. Knudsen, who hails from Great Falls, Montana, will accept a job with U.S. Atomic Energy Commission at Grand Junction, Colorado, and Johnson, originally from Lewistown, Montana has joined the Navy to become a pilot. Marvin Mitchell, Squanish, British Columbia, has went to work for Alwin Mining Company in Aschroft, B.C.

Mining and Geology graduates. Left to right, Pete Knudsen, Bill Williams, Curt Degenhart, and Bill Pierre.

Graduates in Geophysics are Will Goldberg and Gary Dunford.

Two students are graduating in Geophysical Engineering this spring. They are Gary Dunford and Will Goldberg both of Butte. They both will be working for Pan American Petroleum Corporation in Denver and both plan if possible to go to graduate school. Goldberg is also receiving a degree in Geological Engineering.

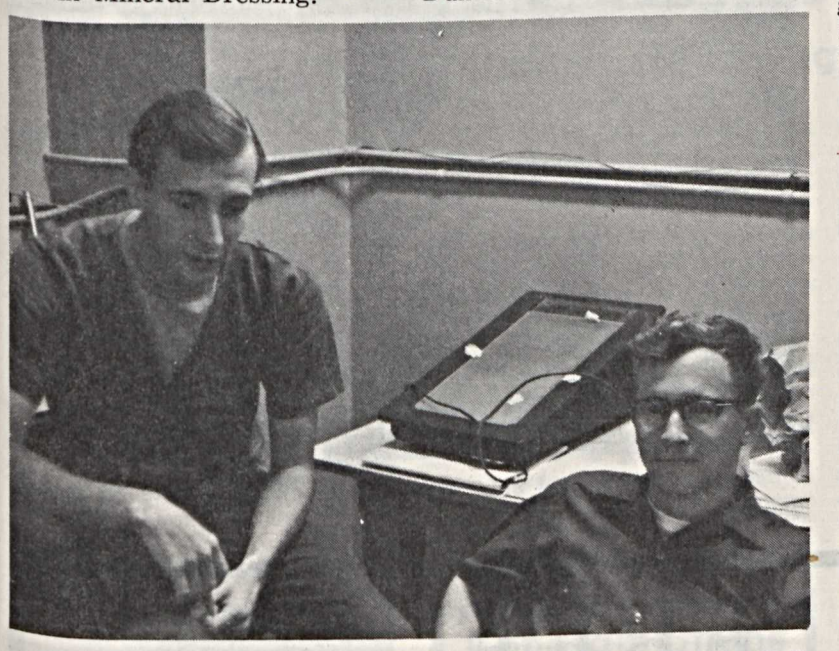
METALLURGY

Two members of the senior class are graduating this spring in Metallurgy and Mineral Dressing. These people are Kent McGrew from Sacramento, California who is a Mineral Dresser, and Robert Ramsay of Butte who is a Metallurgist. Both plan to return to Tech next year and continue their education with graduate studies in Mineral Dressing.

Eight engineers will graduate this spring in Engineering Science making this the largest class since the degree was first offered. The graduates and their future plans are listed below.

Tom Martin of Butte, Montana will work for Pan American Petroleum Corporation in Denver, Colorado. Also working in Denver will be Lee Latimer of Butte who will work for Martin-Marrietta Company. Steve Sands also of Butte will be working for the U.S. Army Material Command in Texakana, Texas. Going to graduate school at Montana Tech is Dick Rule who lives in Butte.

Others include Charles Ljungberg of Holdon, Massachusetts who will be working for Ingersol Rand Corp.; Bob Balhiser of Great Falls who is working for Kennecott Copper Corporation in Tuscon, Arizona; Jim Loomis of Butte who is working for Dow Chemical Corp. in Colorado; and R. M. Solari of Butte who is working for the Anaconda Company in Butte.



Gratuates in Mineral Dressing and Metallurgy include Bob Ramsey and Kent McGrew.

Graduates in Engineering Science. Left to right, Doug Meseroll, Lee Latimer, Tom Martin, Dick Rule, Steve Sands, and Charles Ljungberg.

Miners win conference in 1947

The year was 1947, the month was April when this head line apeared in De Re Metallica. The Miners had compiled a 20 win and 2 loss record to win their first Conference basketball championship since the conference started in 1936.

The Miners won the Championship by defeating the Carroll College Saints by a 44-39 score. During the season they averaged 48 points a game on their way to the first championship.

Some of the teams they played have since changed their names.

Frank Young awards Tai Hum chess trophy as Claude Huber runnerup looks on.

Hum and Huber chess champions

Tai Hum, a freshman engineering student from Butte, defeated Claude Huber to Become Montana Tech's chess champion. The tournament was held during the E-day festivities here at the school, and according to Frank Young, it will become an annual event.

The tournament has been named in honor of Dr. Adam Smith, who was an avid chess player himself. Equipment for the tournament, and awards for the winner were provided for from the late Dr. Smith memorial fund. Other participants in the tournament included Claude Huber, second place, Fred Hoffman, third and Dan Lester, fourth, with Bob Chew, Gordon Crawford, John Evens, and Bob Mihelich going out.

Ashphalt studies in progress here

In cooperation with the Montana State Highway Department and the Bureau of Public Roads, an investigation has been underway for the past two years under the direction of Dr. Keith Ensley to study bonding or adhesion between aggregates (paving rock) and asphalt. The project was funded in June 1967 and construction of a microcalorimeter to measure the energy released in the bonding process was begun by Henry Scholz, graduate student in Mineral Dressing.

Mr. John Cavanaugh, Engineering Science, joined the project in the fall of 1967.

The energy released when aggregate is immersed in asphalt is called the heat of immersion. Energy released in an immersion process is very small and requires special instrumentation to measure quantities which are less than one-thousandth of a calorie. The equipment has to be designed to operate at temperatures above 100 degrees C.

Energy released is detected by an elaborate electroplated thermopyle assembly. The resulting signal is fed into a microvoltmeter and on to a recorder. In a typical run, about a half of a gram of aggregate (sandsize) is dropped into 5 grams of test asphalt. The recorded curve produced by the energy released in the bonding of the asphalt to the aggregate enables one to determine which aggregate and asphalts give the best bonding.

We believe the better the bonding, the better the performance of the paved highway.

Metallurgy, Mineral-Dressing sponsor active continuing research projects

The departments of Metallurgy and Mineral Dressing are currently handling problems concerning engineers by using teams of graduate and undergraduate students and professors for partnership solution to the problems. These projects require the understanding of basic science and mathematical logic and their effective application to a particular situation in which the engineers are involved.

One project which is an example of student-faculty teamwork deals with measuring and defining streaming currents. Professor Villena, Robert Beers, and Kent WcGrew have theorized that streaming currents are quantitive measurements of absorption reactions between a mineral surface and a flotation reagent. Streaming current is the phenomena which occurs when a fluid is forced past a mineral surface and the flow is controlled completely by the properties of the surface and the fluid. A change in surface projerties brought about by a flotation reagent causes a change in streaming current, and thus the reaction between the mineral surface and the flotation reagent can be observed. To date, this project has been limited to developing an accurate method of measuring the streaming currents. When this is completed the next step will be to construct streaming cells which will allow control of reactions while the currents are measured. Then the measuring of the absorption reactions will be possible.

Another research project that is headed essentially by one person concerns the nature of molybdenum. Graham Caldwell, a graduate Metellurgical Engineer has turned his attention toward solving some of the problems common to all molybdenum producers. Some of these problem areas include a study of the molybdenite particle during concentration by flotation and the effects of other elements, especially iron, in the flotation, the extent of the iron effect, and the cure, if any, of this detrimental force on the molybdenum. Graham is especially well suited to this project because of his extensive background with molybdenum stemming from his years with the Chile Exploration Company where he was Assistant Supervisor of the Concentration Division.

An additional research project headed essentially by one person deals with one of industries' major problems. This is, namely, the problem of clay in tailings disposals. On a recent summer job with the Great Canadian Oil Sands Company, Brian Raymond because aware of the great amount of tailings which had to be impounded when extracting oil from the Athabasca tar sands. He is presently employing a Zern-point-of-charge system to accumulate data needed to study synthetic systems of composition on tailings ponds. This data will be used to determine the efect of such elements as calcium and magnesium on clay minerals. When the elements which provide maximum settling are found, further tests will be made of these elements to determine their viscosity and maximum clay loading content. The element used will also be decided upon using cost consideration and availability. Tests for levels of filtration, evaporation, and freeing to concentration will then be performed and further recommendations for research can be made.

PETROLEUM RESEARCH

The petroleum department is presently engaged in a student-faculty research project dealing with interfacial tensions on hydrocarbons. Dr. Warren, working with Gary Johnson, will construct an apparatus to effectively measure the molecular forces on the surface of a liquid or solid which cause interaction with other liquids, solids, or gases. This apparatus will measure temperatures from a low of -300 F to a high of 500 F, and pressures from a vacuum to as high as 5000 lbs.

This research project will hopefully have a definite pract- be built will be superior to those ical value as the apparatus to already in existence, and the project itself could raise the amount of oil which could be extracted from an oil reservior before it becomes exhausted economically. Actually, present methods tap only about 1/4 of an oil reserve before it becomes economically unfavorable to continue.

Draft deferment not to be given to graduate students teaching

The following Local Board Memorandum has been placed in distribution by National Headquarters of the Selective Service System to each of the 56 State Headquarters and 4.087 Local Boards of the System.

"LOCAL BOARD MEMORANDUM No. 96,

"ISSUED: April 25, 1968

Registrants Pursuing Courses of Graduate Study

"A full-time graduate student shall not be considered for occupational deferment because he is engaged in teaching part-time.

"/s/ LEWIS B. HERSHEY
"DIRECTOR"

The Engineers Joint Council has noted that this policy is in compliance with the National Security Council advice of February 15, 1968. which precludes deferring individuals (other than medical students and other exceptions noted) for reason of graduate study. Individuals may still be given occupational deferments on an individual basis if their Local Board finds their employment is essential to the national health, safety, or interest, or meets an essential community need.

Practices will differ from state to state on what constitutes a full teaching load, but in general if an individual is teaching the same number of class hours as the average full-time professor, there is reason to consider him a full-time teacher. The fact that people who are working full-time in teaching, research, or any other occupation are also taking graduate study courses is not a bar to their being occupationally deferred is the individual case so warrants.

The Engineers Joint Council has also said that individuals may not be deferred because of graduate study, but the taking of graduate courses does not prevent a man from being deferred for other valid reasons.

It is suggested by the EJC that employers of teachers and researchers insure that their appeal rights are fully exercised in all such cases, as this will help to resolve differences in Local Board interpretation of individual cases.

Foote A.W.S. prexy

Susie Foote was recently elected president of the Associated Women's Students. Elections were held on May 13 from 8:00 to 4 00 o'clock in the coed room.

The campaigning began one week prior to the election and the other nominees were Eileen McNellis, Jen Jansky, and Sherrie Huddleston.

Suzie served as an AWS officer for part of the school year and is a freshman and an active member of both Newman and WRA. Outgoing president, Carol Trythall, officially turned her office over to Suzie at the Women's Day tea, which was held on May 27.

Henry Scholz and John Cavanaugh check results on test of asphalt aggregate.

Geology field trips of the past: Left, the class of '09 encamped at Bridger Canyon. Right, the same class enroute to Yellowstone Park.

GEOLOGY FIELD CAMP HAS COLORFUL HISTORY

by Dr. Fred Earll

Geology is an outdoor science, and although many of its principals can and in fact must be taught in the classroom, field studies remain an essential part of the training.

Field geology has been a part of the Montana Tech curriculum since the schol began. In the announcement of the school's opening in 1900 there was included a course in Mine Surveying. The description of the course work, however, noted that geological surveying would be included, and that "Topographical and geological maps" would be constructed during the course. By 1903 provision for "geological excursions" to nearby mines was added to the required work, and in 1904's catalog, field geology was offered as a separate and distinct course occupying a four-week period during the senior year. This is not too different from the current practice.

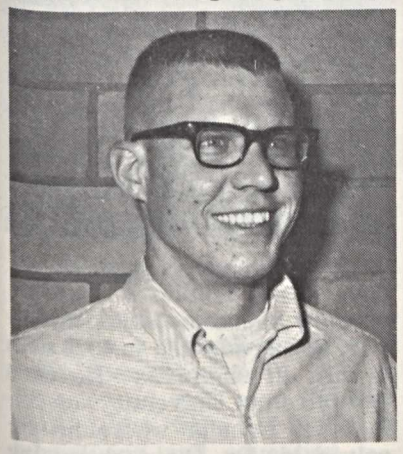
Photographs of some of those early trips show a pretty rugged lot; field gear packed into horse-drawn canvas covered wagons; students, their mustaches flowing and revolvers at their sides, ready for their stay in "the hills". Today, of course the horse-drawn wagons are a thing of the past. The rest of the picture hasn't changed as much as one might think. The last time we had a horse as a full-time member of the party was back in 19¢6!

Montana Tech has never established a permanent field station, as many schools do, the camp having been located many different places over the years, though always in southwestern Montana. In recent years the camp has most frequently been located within the upper Gallatin Valley in the Madison-Gallatin Ranges some 50 miles south of Bozeman. Here the student learns to apply the techniques he has been taught in the lecture room and the laboratory. The field work includes the study and careful description of rocks in the field; measurement of rock sections and interpretation of environments of past ages as recorded in the rocks; construction of geologic maps using traditional as well as the most modern techniques; and finally construction of structure maps and sections to allow interpretation of the evolution of the local geology. As always, a written report on the work done is required as a final task.

Every effort is made to keep the student's expenses for the field camp at a minimum, the group is usually housed at local ranches that provide 'family style' accomodations and meals.

Blumer, Dahl win AMAX award

John Blumer and Gary Dahl were recently named the recipients of the AMAX scholarships. The 375 scholarships are awarded to two geological engi-



John Blumer

neers each year for their scholistic achievements and progressive attitudes in geological engineering. The scholarship, granted by the American Metals Climax Company, is for the annual summer field camp held for our geologists.

The main purpose of the summer camp, which will be conducted from August 12 through

Gary Dahl

September 11, is to give the geologists experience in evaluating an area geologically, by mapping and surveying. Professors William Cox and Dr. Earll, Dr. Dresser and Dr. Fisk will conduct the camp. The particular camp site has not yet been decided upon.

Both John and Gary are juniors, football players, Mineral Club members. Gary is presently Theta Tau marshall and AIME president. Blumer, whose hometown is Harlowtown, is vice-regent of Theta Tau.

Garrett, Trask, and Eaton engaged in mining research

The graduate students in Mining Engineering at Montana Tech are busy preparing masters thesis on many different phases of research in the mining field. The theses' subjects vary from mining methods for production to ventilation and fill techniques.

One masters project by Chuck Garrett deals with laboratory and field testing of expanding concrete as a method of support within the mines. Original mixes of this kind were developed to expand a calculated percent to counter the stress of the walls and the openings around a mine. Instruments used to measure the stress and effectiveness of the concrete are owned by the school and were donated by the Bureau of Mines.

Another masters degree by Frank Trask projects is a laboratory of copper from Butte ore. When he is finished, this engineer wil be able to predict acid consumption, amount of copper recovery, and effects of alteration in the ore from this area. This will be especially helpful in increasing total ore reserves that are leachable, thus increasing the life of copper production in Bute.

A third thesis project, by Larry Eaton, deals with the handling of data collected from a Utah mine. Almost two years of measurements and recordings of the movements of the mine's roof will be combined using mathematical methods and computers to form an equation. This equation will be useful in estimating the width of mine openings and the time that will be available for mining it, thus more ore will be freed, and the safety factor will be largely increased.

The Orediggers won conference football championships in 1937 and 1938.

Bureau history dates back to 1919

By Uuno M. Sahinen

The Montana Bureau of Mines and Metallurgy was established by the State Legislature in 1919 as a department in the Montana Schol of Mines under the direction of the State Board of Education. All three agencies have since been renamed, so it now should read—The Montana Bureau of Mines and Geology, a department in the Montana College of Minerial Science and Technology, under the direction of the State Board of Regents.

The first director of the Bureau, appointed by the State Board of Education, was Dr. Charles H. Clapp, then president of the Montana School of Mines. Dr. Clapp was a geologist, and it is probably through his efforts that the Bureau first came into existence, although the bill that created the Bureau was introduced in the Legislature by Rep. Arthur V. Corry, a well-known mining engineer of Butte. Dr. Clapp's administration was short, for after only two years he was transferred to the presidency of the University at Missoula, but during this time, he was the Bureau's geologist, Arthur E. Adami was its mining engineer, and H. B. Pulsifer took care of metallurgy and safety matters. The first four bulletins were published in 1919-1921. At this time Gerald S. Lambert and Arthur C. Bevan were added to the staff as assistant geologists.

Dr. George W. C Craven, who succeeded Clapp as president of the School and director of the Bureau, was a mathematician and at that time had his hands so full operating a growing mining college coupled with teaching that he had little time for the budding Bureau. In August 1923, however, the Bureau published Bulletin 5, on mining law, by A. E. Adami. This was about the last activity until the fall of 1928, when Dr. Craven was succeeded by Dr. Francis A. Thomson, a mining engineer.

During 1928, however, Dr. Eugene S. Perry, head of the School's Geology Department, wrote Memoir 1, The Kevin-Sunburst and other oil and gas fields of the Sweetgrass Arch. This was frist published as a serial in the Montana Oil (and Mining) Journal; extra copies of the serialized version must have been run off, as the first bound Memoir 1 is in 3-column newspaper format. Maps and drawings for this report were made in the drafting rooms of a cola mining company. This report seemingly convinced the Legislature of the need for a Bureau of Mines, for in 1931 the Legislature appropriated $25,000 to operate the Bureau for the biennium. In the year (1931) the Bureau hired its first full-time employee (this writer), who labored under the incongruous title "draftsman and staaistician." Bulletin 6, Geology and ore deposits at Bannack and Argenta, by Phillip J. Shenon, was published in this year also. It came out as a letterpress job designated as a quarterly publication, a tacit promise of four such bulletins a year, a promise which was never kept, for the second quarterly report never materalized. The Bulletin series was dropped in favor of the larger (8½ by 11) memoirs, which were all mimeographed on the campus.

The Bureau had to be run as frugally as possible — even cheaply. I recall that most field cars were secondhand vehicles. Salaries were low, and state allowance for travel - subsistence was $6 per day maximum, receipts being required for all expenditures except meals. There was no "per diem in lieu of expenses." I also recall that my allowance for drafting supplies was $25 per year! Field work was done by faculty members of the School who either had 12-month contracts or worked during their vacation time for the Bureau. Yet during Thomson's administration, 1928 to 1950, the Bureau issued 32 memoirs and 10 miscellaneous contributions on the subjects of petroleum, natural gas, basic geology, ground water, placer mining, economic geology of different mining districts, commodity reports, stratigraphy, a biblography of Montana geology and mining, and numerous mining directories.

In 1950 the Bureau staff consisted of just two full-time personnel, an assayer and a geologist, the bulk of the work being done by faculty and staff of the School of Mines.

On Thomson's retirement in 1950, Vice President A. E. Adami was appointed acting president of the College and director of the Bureau until April 1951, when Dr. J. R. Van Pelt, a geologist, arrived to take over. In 1952 Dr. E. S. Perry resigned as Head, Department of Geology, Montana School of Mines, and Chief Geologist of the Bureau. He was succeeded in both capacities by Mr. W. S. March, Jr., a mining engineer-geologist of long experience in South America (Chile). Between Van Pelt and March the Bureau underwent a complete reorganization, activities were stepped up, and the full-time roster enlarged. March was appointed asociate director in 1952, and in 1956 he gave up his position as head of the College Department of Geology to devote full time to his position as Associate Director. During the 1956-58 biennium full-time personnel had increased to eleven, and 15 faculty members and graduate students were employed on special projects.

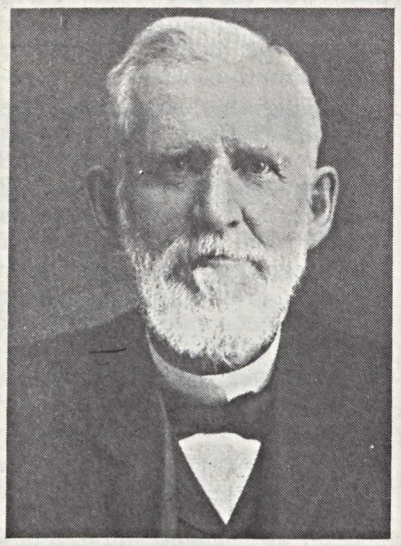
The Legislative Assembly of 1953 appropriated funds to start the collection of cores, cuttings, and logs from wells drilled for oil and gas in Montana. The core library, which is vitally important as a source of data essential to the finding of oil and gas in stratigraphic traps, was established in Billings by the Bureau and was operated by it until July 1, 1957, when its operation was taken over by the Montana Oil and Gas Conservation Commission.

March retired and was succeeded as Associate Director by Uuno M. Sahinen, a geologist-mining engineer, in June 1952. The organizational setup of the Bureau as it now stands is still within the framework outlineed by Van Pelt and March, Since its inception the Bureau has issued a total of 165 publications; a complete list can be obtained free on request.

For expenses in 1905, a registration fee of $5.00 was required for each semester, with no tuition charged to bona fide residents of Montana.

Tech presidents have been varied group

Nathan R. Leonard, the first president of Montana Tech., was born in Pennsylvania in 1832, the son of a pioneer family devoting much of its time to agriculture. When he was twelve years of ago, his parents moved to Iowa, and after attending primary schools there, he entered Kossuth College, where he graduated in



Nathan Leonard

1957. After seven years of teaching at him alma mater, he was elected to the chair of astronomy and mathematics at Iowa State University. In 1887, he moved to Fort Wayne, Indiana, where he became editor and proprietor of the **Fort Wayne Daily Gazette**. In 1889 he took up residence in Butte, and in 1900 he was elected president of the new institution, the Montana State School of Mines.

Charles Bowman

A position which he held until 1906.

Charles H. Bowman, the second president of Montana Tech. was born in Davenport, Iowa, on November 19, 1873. He received a degree in physics from the State University of Iowa, and became an instructor at that institution. He was a member of the American Institute of Mining and Metallurgical Engineers. He became president of what was then the Montana State School of Mines in 1906, and served in that capacity until he resigned in 1919.

Charles H. Clapp, third on the list of presidents, came to Montana School of Mines as a professor in geology in 1918. He was a graduate of the Massachusetts Institute of Technology with a bachelor of science de-

Charles Clapp

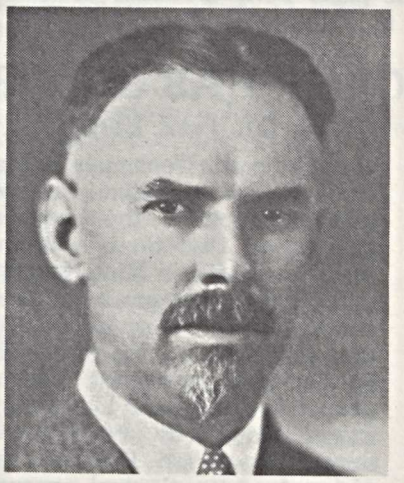
gree in mining engineering. In 1910, after further study he received his Ph. D. from his alma mater. He was a member of the Geological Society of America, The American Institute of Metallurgical Engineers, and the American Association for the Advancement of Science. He became acting president of the School of Mines in 1918, and in 1919 he was appointed president of the institution. In 1921 he was transferred to Montana State University as acting president.

In 1907, George Warren Craven came to the Montana School of Mines. A pioneer himself and

George Carven

the son of a pioneering family Mr. Craven possessed all the qualities of the rugged geniality of the old west. His father was the first ordained Methodist Minister in Montana. He was a member of the faculty of the Mines for twenty three years, serving as the fourth president of the institution from 1921 to 1929. He died on July 30, 1936.

Francis Andrew Thomson, the fifth president of the School of Mines was born in London on December 21, 1879. He came to the United States by way of British Columbia, where at the age of sixteen he worked as an apprentice assayer and millman for the Victoria Metallurgical Works. He studied further at



Francis Thomson

the Royal School of Mines at London and at the Ecole des Mines in Paris.

In 1917 he became Dean of the School of Mines of the University of Idaho, and director of the Idaho Bureau of Mines and Geology. In 1929, Dr. Thomson became president of the Montana School of Mines at which time he also served as chairman of the Mineral Industry Education Division of the Institute, representing the five northwestern states. Dr. Thomson passed away soon after he retired in 1951.

Dr. J. R. Van Pelt came to Butte from Columbus, Ohio, where he had been a mining engineer and a research executive. He was educated at Cornell College, Iowa and received

J. R. Van Pelt

his B. A. in geology in 1918. Following service in the Army during World War I he attended Michigan College of Mining and Technology where he received degrees of bachelor of science and engineering of mines in 1922. In 1926 he became a professor of geology at Cornell. In 1951 Dr. Van Pelt left Columbus to assume the duties of presidency of the Montana School of Mines where he also served as a representative of the Montana governor on the Western governors mining advisory council. He left Montana Tech in 1956 so that he might asume the duties of presidency of the Michigan College of Mining and Technology at Houghton, Michigan.

An April 8. 1957 the appointment of Dr. Edwin G. Koch to the presidency of the Montana School of Mines was announced. Dr. Koch attended primary school in Butte and Missoula,

Edwin G. Koch

entered Montana State University, and graduated in 1928 with a B.A. in chemistry. He then entered the University of Illinois at Urbana where he received his Pr. D. in chemistry in 1933. Following graduation he worked as a research chemist for the Hurcules Powder Co., Shell Oil Co., Amalgamated Sugar Co., and Atlas Powder Company. In 1937 he became an instructor in chemistry at the University of Tennessee and after World War II he took the position of assistant professor of chemistry at the University of Texas for a short period, a position which he terminated to become head of the department of chemistry at Montana School of Mines in 1946.

One of the first championships to be won by the Orediggers was the baseball championship of 1907.

Butte School of Mines preceded State school by several years

In the early days of the Montana School of Mines, which at that time was in more direct rivalry with the institutions at Missoula and Bozeman, reference was often made to the school as the "Butte' School of Mines. This tag produced much resentment on the part of Mines students because they felt it inferred that the Mines was unworthy of state authorization. What the Mines students were evidently unaware of is that previous to their school there actually existed a 'Butte' School of Mines.

In 1894, two enterprising gentlemen known as Bethune & White, began as a private venture the Butte School of Mines. It is not known who White was, but George E. Bethune was reportedly a mining man of considerable standing. He was also noted as a reliable assayer, a mine operator of sorts, and an experienced mill man. Whites' chief tasks were to assist in advertising and education.

The new school was to be located at 11 East Granite, where previously a Madame McCarroll had been running a beauty salon. For equipment Bethune and White secured that of an assayers shop with necessary furnaces and some provisions for experiments in chemistry. The quarters consisted of two small classrooms where pupils dealt mostly with assaying. It is said that none of them traveled very far down the academic road; although Bethune and White advertised that two aspiring 15 year old boys, direct from grammer school, had completed the course and now held lucrative and honored positions in the Montana mining industry, and at the age of only sixteen. Bethune and White were in direct competition with Olaf Bergstrom, an assayer for the Colorado Smelter, who taught young fellows the principles of assaying for a small fee.

Evidently the Butte School of Mines left no great impression on the Mining industry of Montana, for little is known about it today. Apparently Bethune & White's venture came to an end when the state institution with its "wonderful building and modern equipment" (Main Hall) got underway in September of 1900.

Marcus Daly statue work of famous artist

Standing with hat in hand, coat draped nonchalantly over his left arm, Marcus Daly greets Tech students and visitors as they climb Park Street to this famed institution.

The monument has stood here as a symbol to all Montanans since June, 1941 when it was moved from its original position in front of the Federal Building on Main Street.

The statue of Marcus Daly, a one-time Copper King, is the work of Augustus Saint-Gaudens. It was unveiled to hundreds early in September of 1907. The approximate cost of the monument was $40,000.

Saint-Gaudens was born March 1, 1848 in Dublin, Ireland, and died August 3, 1907. This sculpter, who has been regarded as one of America's grestest artists, is responsible for the Lincoln in Lincoln Park, the Adams in Rock Creek cemetary in Washington, D.C., and the General Sherman at the entrance to Central Park.

Although Marcus Daly has been subject to tar and feathers, paint and other forms of vandalism, and has been dressed in holiday attire, he is a reminder of Butte's past and a symbol of Tech's growth.

FUTURE MAY INCLUDE EXPANDED CAMPUS

Montana Tech's future plans include not only an increase in enrollment but a long-range campus program as well. This building program needed for the additional students would provide ample space for classrooms and laboratories as well as for industrial research which could be carried out in the privately financed research center planned for the west border of the campus.

Walter Hinick, the architect for the expansion program, said that the new stadium west of the school constitutes an excellent start for the proposed master plan (see front cover). Some buildings—Main Hall, the engineering building, the mill and metallurgical buildings — would be removed. They would be replaced by an engineering building; mining, geology and mineral dressing building; and a humanities center. The north campus would be all new buildings except for the present dormitory, which would have a new wing.

New buildings would include a chemistry-science building, a student-union auditorium and a library. The existing library would become a museum and the present student union would be used as an administrative building.

Additional student housing be located east of the present dormitory. It would include dormitories along Park Street and married students' housing along Granite Street. A field house is envisioned, also.

A research center would border the west side of the campus. It would be a private complex staffed by private industry, but using the research potential of Montana Tech faculty and students.

The ultra-modern library planned for this expansion project would serve upwards of 2,000 students, with space on the lower floor for undergraduate needs. Research and advanced degrees work would be provided for in one area. The library would have 45,000 square feet of floor space.

Planned for Montana Tech also is a humanities and social studies building, that would house the English, History and Social Studies departments, which are showing a marked enrollment increase at the school. The unit would accommodate classrooms, lecture halls and faculty offices.

It is the hope of all who are interested in a growing, progressing Montana Tech that this expansion plan for the school becomes a successful reality.

"M" Big Butte not always what it is nowadays

What bright and shining symbol of accomplishment and ambition greets the weary Butte-bound traveler?

What brilliant structure adornes Big Butte and glows suspended in the night sky?

Yes, fellow Tech students, it can be nothing but the Mighty "M" that greets weary travelers to Butte.

On May 1 the "M" received its 58th annual lime bath. The the first Wednesday in May, "M"-Day, is the oldest Montana Tech tradition.

"M"-Day began in 1910, when members of the graduating class originated the idea of forming the rough letter "M" from rocks found on the hillside. The original letter was 60 feet wide and 90 feet high on a 30 degree slope.

Water was carried to the "M" by bucket brigade and then mixed with lime to make the whitewash. With Walter Jensen as the leader, the forty-five members of the Student Body, including Seniors and Juniors George Condon, Burt W. Dyer, August Grunert, William Stuewe, and Vern Heimerdinger worked from 7:00 a.m. to 6:30 p.m. to complete the job.

A few years later, when C. H. Bowman was Tech's President, the "M" was reconstructed to form a block letter "M", measuring 90 feet by 90 feet, Surveying was done by Dean A. Adami.

In 1958 plans were made to concrete the "M" and to light the letter by John Templin, Sophomore Class President. These plans were postponed, however, for lack of support and materials.

Finally, in December, 1961, construction of a 7 foot high cyclone fence around the "M" began, with the target date of completion to be "M"-Day, May 2, 1962. The main purposes of the enclosure were to keep people off of the letter and to hold the loose rocks in place.

The fence was build first, supported by 8 foot mine rails donated by the Anaconda Company, and airfield-type lights were later placed along the outline of the "M".

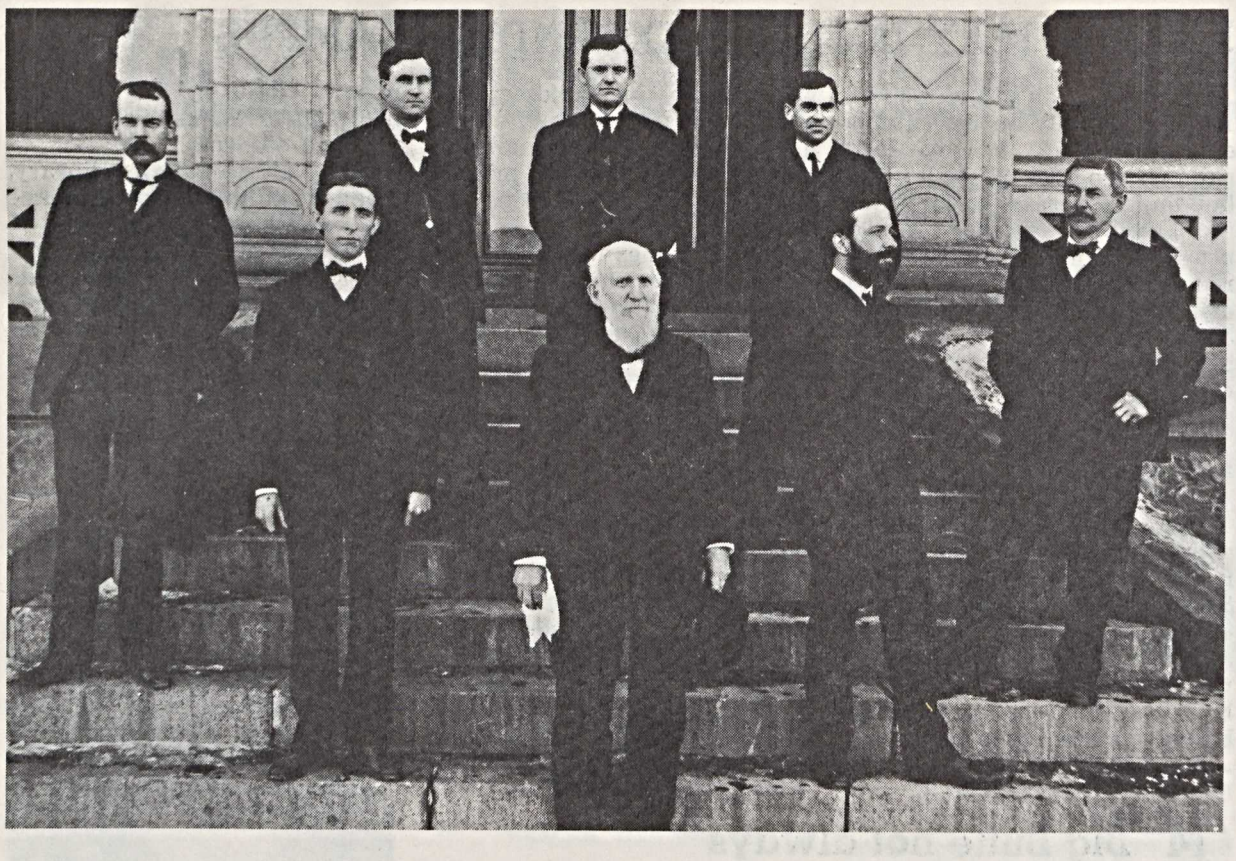
Through the combined efforts of the Montana Tech Alumni Association, the project's sponsor, the Copper Guard; and the M-Club; "M"-Day, 1962 was the brightest in the history of the school. Governor Babcock "turned on the lights" to illuminate one of the largest block letters in the state and the nation.

In addition to designating Butte as a college city, the "M" has the added distinction of changing the color of its lights to fit national holidays, and changing its lighted shape to form a "V" when Tech's athletes boast a victory.

The "M" again stands white, gleaming and proud thanks to its recent whitewash, a credit to Butte and the hard-working, always eager Montana Tech suudents!

"A college course that taught nothing but simply asked, 'What have you learned this week?' and 'What could you do with it?' could well be far more productive than the hour lost to stuffing in a few more undigested facts."

T. A. Rich
General Electric Company



The Montana School of Mines faculty for the year 1907 is shown. They are, from left to right, Erwin Mac Donald (mining engineer). Lester Hartzell (chemistry), C. H. Bowman (mechanics), George Craven (mining engineering), President N. R. Leonard, Peter Pauly (mineralogy), A. N. Winchell (geology and mineralogy), William King (chemistry and metallurgy).

Alumni history 1904-1968

The Montana State School of Mines, the original name of the institution, was first opened for registration of students, on September 11, 1900.

The number of students registered in the first year was 39 and the first graduating class, that of 1903, had but one member, Mr. L. V. Bender.

Following the graduation of the Class of 1904, a meeting of the classes 1903 and 1904 was held in June 10, 1904 at the home of Miss Clara Clark (a graduate in class 1904) in the first block on North Washington Street and just north of the present Y.M.C.A. The purpose of the meeting was the organization of an Alumni Association. All members of the classes of 1903 and 1904 were present, as follows: Louis V. Bender; A. S. Balinforth; Clara Clark; J. Fred Duling; A. J. Irelan; H. E. Kuphal; Isabel Little; L. D. MacRae; John McGee; P. L. Pavly, and H. S. Tallant.

Temporary officers named were P. L. Pauly, chiarman and L. V. Bender, secretary, following which a constitution and by-laws were adopted. Officers elected for the Alumni Association were: President — L. V. Bender. '03; first vice president — John McGee; 2nd vice president—H. E. Kuphal; secretary—P. L. Pauly; treasurer—A. J. Balinforth; Executive Committee—L.D. Macrae; H. S. Tallent; A. J. Balinforth.

In 1912 members of the alumni were instrumental in obtaining underground work for students—first for the athletes for one-half shift for several nights per week, then later, work for needy students for two full shifts per week was obtained.

In 1920 a five million dollar bond issue for higher education in the State was initiated by the circulation of petitions to the voters of the State. Petitions were circulated by the alumni from all College units, high school students and friends over the State. After the election. it was generally agreed that it was a 10,000 vote majority from Silver Bow County that won the election in favor of the bond issue. An alumnus from the Montana State School of Mines was director of the campaign in the counties of Deer Lodge, Powell, Granite and Silver Bow, in addition to assisting in several other counties in the State,

In 1938 the alumni sponsored a Memorial for Dr. Theo Simons formerly Professor of Mining Engineering at M.S.S.M. and $4,000.00 was raised for a Loan Fund for needy students.

In 1956 and 1957, Dr. A. E. Adami was delegated to visit different mining areas in the United States where many alumni were residing in order to organize an alumni section at each location. Sections were organized in Salt Lake City, Grand Junction, Denver, San Francisco, Seattle, Spokane, Hibbing, Minnesota, and New York City. Many favorable comments have been made that the Montana Tech Alumni Association is known for its great activities and accomplishments. In 1967 alumni meetings have been held in Los Angeles, San Francisco, Spokane and Denver and a meeting was held in New York in February of 1968.

Recently various projects were undertaken by the alumni such as in 1961-1962 with a program to increase student enrollment to 600. Additionally, the lighting of the "M" on Big Butte was begun. (The "M" had been built by the student body in 1910).

In 1962-1963 the alumni campaigned for greater enrollment, and also proposed to the legislature that a change in the name of the college be made. Moreover, the promotion of greater public relations in Butte and surrounding areas was implemented.

In 1963-1964 a project for general campus improvement and also for an alumni stadium was proposed and Edward I. Renouard, '20, was named chairman. Ground was broken April 30, 1964. A computer was purchased for the school and a large down payment was made.

1965-1966 was notable because the $350,000 stadium was completed except for lighting. Furthermore, the Montana School of Mines Alumni Association became the Montana Tech Association, and the Association was incorporated in the State.

A year later planning for the future campus was started and an architect was employed to complete a set of plans for a new library, a new mining, geology and mineral dressing building, a new mathematics and science building. and a research complex. The Alumni Association also decided to place a plaque at a prominent place at the stadium with the names of each contributor of over $50.00 to the Stadium fund. Many hundreds of names of individuals will be shown; different companies and contractors in Butte and out of State have contributed most generously to the building of the Stadium.

During the present year major activities are the lighting of the stadium, mineral display cases for Montana high schools, and a special lighted mineral display for the Butte Airport.

Officers of the association for 1967-1968 are George T. Hanson, '38, president; Peter J. DuToit, '56, vice-president; and Rayworth F. Howe, '34, secretary-treasurer.

The girl I left behind me
I think of night and day
For if she ever found me
There'd sure be hell to pay

Tech off to a slow start

The "Enabling Act" of 1889 which paved the way for the admission of Montana into the Union as a state contained a provision for a donation of public land for the establishment and maintenance of a state school of mines.

Early in the 1890s Governor J. E. Richards appointed a board of commissioners to investigate the possibilities of building the state school of mines. The board visited the Colorado School of Mines and investigated that organization. The board decided that the school should be built and that because of the favorable geology and the presence of mining the school should be built in Butte.

In 1895 the legislature appointed a building commission and authorized the issuance of bonds, the proceeds of which were to be used for the erection of a suitable building for the school. Plans were completed in early 1896 and construction started in December of 1896 on the bench at the foot of Big Butte. The plat of ground, 376 by 500 feet was donated by certain public spirited individuals. The building was finished in 1897 and measured 90 by 118 feet.

After Main Hall was completed is sat unused until 1900 because of lack of funds. It is reported that this caused much embarassment to the citizens of Butte.

Finally on September 11, 1900 the Montana State School of Mines was officially opened with the admittance of 39 students. The degrees to be awarded were Engineer of Mines (E.M.) and Electrical Engineer (E.E.) No charge for tuition was made to a student who was a bona fide resident of Montana.

The first staff of the college consisted of Nathan R. Leonard, first President and Professor of Mathematics; William G. King, Professor of Chemistry and Metallurgy; Alexander N. Winchell, Professor of Geology, Mining and Mineralogy; Charles H. Rowman, Professor of Mechanics and Mining Engineering; and Harold S. Boardman, Instructor in Draughting and Mining Engineering.

The School of Mines Building was erected in 1896-97. Its dimensions were 94 feet by 118 feet.

Tech owns Russell painting

Charles Russell's work "The Grey Wolf" might not seem of particular importance to the artistic layman but it has a special value to the students of Montana Tech.

The original, a painting of three cowboys roping a wolf was presented to Montana Tech in memory of John Gillie (1858-1941), one of the founders of the school and a noted mining engineer in the Butte area. It was painted in 1902 and was presented to Tech by Mrs. Gillie and her daughters, Mrs. Henry G. S. Walace and Mrs. John W. Vann of Washington, D.C., in 1941. The frame of the Russell picture bears a plaque presented by the Anaconda School of Mines in memory of John Gillie one of the founders of the institution and a distinguished mining engineer who devoted his life to the development of the mines in Butte."

Originally the picture was placed above the fireplace in the residence hall, but it has since been permanently loaned to the State Historical Museum in Helena. It has occupied a place of honor there since June 28, 1963.

Mr. Taylor: "Hey, you can't sleep in my class."

Freshman: "I know, because I've been trying for the last half hour."

"M"-Day photos by Pete Knudsen. Top, Students prepare to whitewash ___ in time to vote. Middle, two students display their sentence during Kangaroo other students, the dance had to go on, and Luwanna Marjamaa made it up Court, Sherrie gets mud bath, and Prof. Van Matre shows mining methods.

M-Day active with good weather

M-Day dawned with sunshine, blue skies and the familiar explosion to signal the start of the festivities.

Work crews were supposed to start their chores promptly at 8:00 A.M., but the preceding night apparently made heavy sleepers of the students. However the crews did finally clean the campus and whitewash the "M" by lunch time. Lunch was served by the Copper Guards on the circle lawn. The Pep Band provided stimulating music to watch the girls by. The coeds were also given their traditional M-Day bath during lunch.

After lunch the seniors held Kangaroo Court. Honored and esteemed judges were Terry Angove, Gary Johnson, Ed Nordquist and John Sutey. Dick Rule was prosecuting attorney and Billy Williams was defending attorney. Due to the partisan judgement of the jury and the clever investigating by the judges and attorneys all accused were found guilty and sentenced accordingly.

The seniors also awarded Professor Stout and Professor Van Matre, plaques for their outstanding service to the college and the class of '68.

After Kangaroo court, Sigma Rho and Theta Tau, played an intra-fraternity softball game. The game was exciting from the start to finish with the Taus rallying in the bottom of the ninth to win 10-9. After the game the two fraternities held a joint meeting to discuss the problems of the day.

M-Day was concluded with a dance sponsored by the Copper Guards in the Copper Lounge from 9-12.

Tech represented at Home Show

Montana Tech was represented in the Home and Sport Show on Sunday, May 12 by a booth of exhibits from several of the school's departments.

The booth, sponsored by the Metals Bank, boasted a 15-foot banner reading, "Montana Tech—Then, Now and Future".

The library donated four museum cases containing old pictures of the school to the booth to fit in with our "Then" theme.

A mineral display from the Museum, a miniature model of an oil well from the Petroleum Department, topographical maps from the Montana Bureau of Mines and Geology, and a projector showing slides of activities around the campus contributed to the picture of Tech now.

Tech in the future was presented by an exhibit of architectural drawings of the proposed additions to the school, donated by Professor McGlashan.

A.W.S. and Circle K were responsible for setting up the booth and members of both organizations were on hand during the show to answer questions and to distribute free literature about Montana Tech.

Three deans in Tech history

Probably one of the greatest men to ever be associated with Montana Tech is the man who gave his services completely, dedicatively and continously to the school for one half a century, Dean Arthur E. Adami.

Dean Adami was the first dean of the Montana School of Mines, being appointed to this position in 1943. Dean Adami's connection with MSM did not begin in 1943, but in 1903 when he registered as a student at Montana State School of Mines. He graduated in 1907 with a degree in mining engineering and went to work for the Red Metal Mining Company.

His work in industry was brief, however, for in 1908 he became the first graduate of the school to become one of its faculty members. The faculty then consisted of only nine men and this included the college president. His versatility and abilities made him an outstanding instructor of metallurgy, mathematics, assaying, mining, mineralogy and surveying. Dean Adami never planned to become a professor at Montana School of Mines, nor anywhere else, but after one year of teaching even he admitted that MSM wouldn't let him go. He achieved the academic rank of Professor in 1926 and in 1928 was appointed vice-president of the college. He served as vice-president and dean until his retirement in 1956. Twice in his career, Adami acted as the school's President — first in 1944-45 and again in 1950-51.

Dean Adami has always been closely associated with the school, even after his retirement, He is still active in the alumni association and has held every office possible in the association. He was secretary-treasurer for twenty-five years and is responsible for the founding of alumni sections in eight location in the United States.

Adami has been the recipient of countless, well deserved awards, honors, and tributes. His most memorable tribute by most everyone who knows him, though, was his honorary degree of Doctor of Engineering. Upon accepting this honor he received a standing ovation from graduating students, guests, and faculty, all of whom, were indebted to this dedicated man.

Upon the retirement of Dean Arthur Adami in 1956, D. Charles McAuliffe was chosen the new and second dean of Montana School of Mines.

Dean McAuliffe taught at MSM for forty-two years. He is a native of Butte and graduate of Butte High School. In 1919, the Dean received an Engineering in Mining degree from Montana School of Mines. and after teaching three years at Custer County High in Miles City, he returned to MSM to teach in September of 1923. Besides teaching engineering drawing and descriptive geometry, the Dean served as athletic director and coach of football, baseball, hockey and basketball. He retired from coaching in 1947, but continued as athletic director and professor until he was named vice-president and dean of the college in 1956.

Long time and devoted teacher, coach, and administrator, McAuliffe, is better known by many as "Mac". Mac is a veteran of World War I, and for his gallentry received the Distinguished Service Cross, the French Croix de Guerre, and the Purple Heart.

Dean McAuliffe now resides in Spokane, Washington.

Montana Tech's third and present dean is Gustav Stolz, Jr. He has been associated with our college for thirteen years as instructor and administrator.

Dean Stolz was born in Victoria, Texas and graduated from high school there in 1941. Between 1941 and 1950, when Stolz graduated from Colorado School of Mines with a degree in petroleum engineering, he served with the Air Force in World War II. He received his master's degree in petroleum engineering from the University of Oklahoma in 1951. Prior to teaching at Tech, the Dean was employed as a research engineers for Pan American Petroleum Corporation.

Gustav Stolz became a petroleum faculty member in 1955 at Montana Tech, where he taught for ten years before filling the position of Tech's dean. He is currently head of the department of petroleum engineering and placement director.

Besides being the father of twins and triplets, Gus has received numerous other awards and honors. He is past president of both the Butte Jaycees and Butte Chapter, Montana Society of Engineers. Dean Stolz is also a member of AIME, in which he served as program chairman from 1966-67, of American Society of Engineering Education, of the American Petroleum Institute and of the NSPE Engineering Preparation Committee since 1966. Stolz presently serves on the District Committee of International Scholarships and is chairman of International Students Committee. These are just a few of the many organizations to which our responsible and efficient Dean belongs.

Anyone on or off campus, who is acquainted with Dean Stolz, would have to agree that he is indeed qualified for this job and proves it everyday.

The independents were originally organized as the Mavericks in October of 1935.

The Miner's Hockey team won championships in 1939 and 1940.

1902 Football Team

Bureau, Continental Oil to cooperate

Montana Bureau of Mines and Geology at Montana Tech will cooperate with the Uranium Division of Continental Oil Co. in a study of uranium and trace element potential of western Montana lignites, according to Dr. S. L. Groff, chief, ground-water and fuels division, MBM&G.

Dr. Frank Diebold, assistant professor of chemistry, will be the principal investigator of the research project, Groff said. Ray Martin, Tech student from Butte, wil serve as field and laboratory assistant.

Gross said the project will last two or three summers, and will be financed by $3,000 per year from Conoco.

"Lignite beds and sediments containing carbonized plant materials in the intermountain valleys of western Montana have not been studied for their potential as an ore of uranium, vanadium, germanium, thorium and rare earth elements," Gross said.

Poem's by Robert Chew

PORTRAIT OF AN ARTIST AS AN OLD MAN
When I was young so long ago I dreamt
Of poems—my poems—the little rainbow birds
That would sing my songs for all the world to hear.
So brightly colored, so small. I like the small.
For man is more small than grand, and soap-bubbles
Make rainbows too.

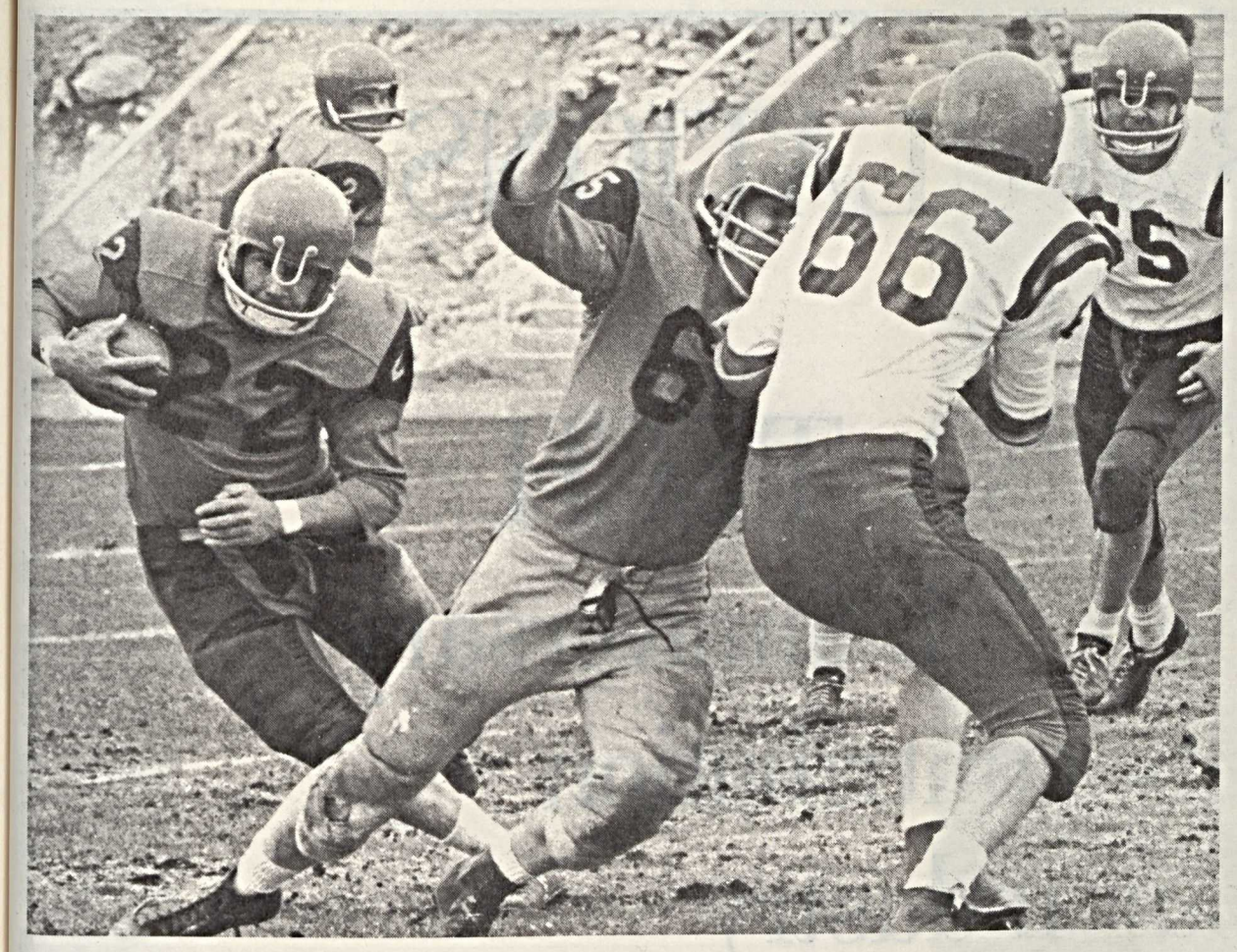
Ah! To make a pretty thing! A man could do
No more. But that was then, and now is now.
Only the rainbows and the youthful prisms have flown
For me. So now I sit without my dreams
And sadly mourn the pretty little birds
That never flew.

THREE

Alone
At night; no eyes,
Only your guts to give
The echo called "you" its life, but
Nobody cares.

Some words
For reflections
In windows of shadows
Of reality's memories:
More words.

A drop
Of seawater
Wriggled onto the shore,
Struggled to life, wept bitter tears,
And died.



Guard Mac Beaudry (65 dark Jersey) puts the key bolck on end Don MacIntyre, 66, as halfback Chuck Roberts, 22, sweeps the end for a long gain. Other players in the background are guard Doug Hartsell, 65, and quarterback Mary Leary, 12, Montana Tech's White team outscored the Copper squad 13 to 12 in the last spring practice session.

Game ends spring football

Montana Tech's football squad concluded spring practice this week with an inter-squad practice game. The final outcome was the White team 13 and the Copper squad 12.

"The scrimmage went about as anticipated, both offensive units were able to move the football well," remarked Head Football Coach Ray Braun. "We divided the squads evenly and this probably accounted for the final score."

Defensively, linebacker Harry Lebsock and Dan Murja, along with defensive end Bob Westermark, were outstanding for the White team, Braun said. Halfback Mel Brekhus and fullback Steve Rackham provided the spark offensively for the White team, with each scoring a touchdown and Brekhus also running for an extra point.

On the Copper squad, the offensive line play of John Blumer, Greg Cork and Mac Beaudry was "better than any line play we've had to date," Braun said. "Running backs Chuck Roberts, Rick Dale and Ernie Burby did a fine job too."

Quarterbacks Marty Leary and Rick Uren handled each team very well on the ground, Braun said, but there are several areas we must improve. Our outside running game and passing need the most work.

The Oredigger coach said the four weeks of practice have been "excellent." "We've gotten most of the offense accomplished and have been able to evaluate the players so we know what positions they will play this fall," Braun said. "With the present squad and the incoming freshman, we hope to have a winning season."

Sutey receives Simonich award

John Sutey, a graduating Petroleum Engineer, is this years recipient of the Ed Simonich Memorial Award. John received this award for his outstanding achievements as an athlete and a student. John was a member of the football, basketball and baseball teams for the past four years. He was also a recipient of the Most Valuable Football Player one year.

John is a member of Theta Tau and is Vice Regent of this organization. He was a member of the Student Council and held the positions of delegate and Secretary-treasurer. John is senior class president and is in Who's Who.

John is an excellent student, He has been awarded many scholarships such as the Conoco Scholarship which he has received twice.

John is active in many areas. He enjoys bowling, golf, hunting, fishing and camping. All in all John is a well rounded person and a credit to the award he received.

Thirteen awarded athletic scholarships

Thirteen top flight high school athletes have indicated to Coach Ray Braun that they will attend Montana Tech next year. These athletes are the first students to receive athletic scholarships while attending Montana Tech.

Seven of the scholarship winners are from Butte. They are Dan McGivern, Terry Heneghan, Mike Claxton, Dave Bennets, Bill Brown, Don Davis, and Dan McElroy.

Dan McGivern, 6-0, 180 lbs, is an excellent receiver. Coach Braun believes he will bolster Tech's passing game.

Mike Claxton, 6-1, 190, plays guard or tackle and will add balance to a strong line.

Dave Bennets, 5-8, 180, plays linebacker and his speed and toughness will make him a good outside linebacker.

Bill Brown, 6-1, 175, plays defensive end and will probably remain at the same position with the Orediggers.

Don Davis, 5-11, 170, plays inside linebacker and was one of the toughest linebackers in AA football last year.

Dan McElroy, 6-0, 175, is an excellent receiver and should help out at split end position.

From Missoula two excellent prospects, Dan Gilman and Mark Brehm, will enroll at Montana Tech next fall.

Gilman, 6-1, 185, was an all-state AA guard and will get a shot at both offensive guard and defensive end.

Mark Brehm, 6-2, 195, is a center and has the speed and size to become an offensive center or defensive nose guard.

Also planning to enroll next fall, are Warren Bickford, Clayton Olmstead, Ron Groseclose, and Bob Defoe.

Warren Bickford, 6-0, 175, started as quarterback for Laurel and will provide balance for the passing game.

Ron Groseclose, 6-2, 195, is coming to Tech from Chester and has a record as the best running back in the northcentral part of the state.

Bob Defoe, 6-0, 215, also of Chester, is a tackle and will add much needed size and strength in the line.

Clayton Olmstead, 5-10, 190, was a fullback at Polson, and will be used in this position along with being a linebacker.

With this added depth and new talent Tech will undoubtedly have an excellent year in the Frontier Conference.

Miners end season

The Eastern Montana College Yellowjackets defeated the Montana Tech Orediggers in a doubleheader Saturday, May 4. Eastern won by scores of 8-1 and 11-0.

Pechovich pitched the first game for Eastern and Brown, Frank and Sullen shared honors in the second contest. John Cohlehepp pitched the first game for Tech with Wally O'Connell and John Sutey sharing the pitching duties in the second game.

Eastern thus upped its Frontier Conference record to 5-1 while Tech dropped to a 3-6 record.

Intramurals finish

Throughout the year Montana Tech's Athletic Department has conducted Intramural competition in various sports. Within the past few weeks, trophies have been awarded to the athletes who are members of the championship teams. The award winning teams in each sport are:

FOOTBALL — Tapakegabrew: Ed Nordquist, Dick Rule, Gary Carson, Bill Daily, Hank Scholz, Jim Leifer, Phil Nichols, Ken Franklin, Mike Marinovich, Karl Pack, Terry Angove, and Mike Duran.

BASKETBALL — The Flourescent Bananas: Dennis Doherty, Jim Ficklin, Dave Wing, Bill George, Gary Vavrosky, Ed Kavran, and Ron Verbeck.

VOLLYBALL — Tapakegabrew: Ed Nordquist, Gary Carlson, Bud McEneny, Jim Leifer, Ron Koeler, Karl Pack, and Hank Scholz.

HANDBALL — Singles: Gary O'Farrel; 2nd place — Fred Hoffman. Doubles — Gary O'Farrel and Dan McVeigh; 2nd place — Fred Hoffman and Craig Bartels.

The Montana Tech Orediggers dropped a lone game to the Western Montana College nine, Tuesday, May 8, by a score of 8-1. The victory over Tech gave Western a tie for the Frontier Conference lead.

Western's Rod Luck had five hits for the seven innings he pitched, and Phil Audit relieved in the eighth.

John Cohlehepp took the loss for the Orediggers, with O'Connell as a reliever. This game gave the Orediggers a 3-7 record for the season.

Season review

The Montana Tech Orediggers wound up the 1968 baseball season with a loss to Western Montana May 8.

The Orediggers began their season on April 13 with two games against Rocky Mountain College. The two teams split the doubleheader with Tech wining the first game 9-4 and losing the second game 3-1.

The following week, April 17, Tech's nine went to Bozeman to play the Montana State University Bobcats. The games were swept by the stronger University team by scores of 3-0 and 11-5.

The weekend of April 20, Tech traveled to Northern Montana College and split a doubleheader. The Orediggers took the first game 11-10 and then dropper the second game 9-4.

On April 30, Western invaded Tech and took the game by a 7-5 score. The Eastern Yellowjackets then swept a doubleheader on May 4 by scores of 8-1 and 11-0.

The Orediggers ended the season with a 3-7 overall record and a 3-5 Conference record.